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Applicant: AHMED, Kamran
Serial No.: 09/526,442
Filing date: March 16, 2000
Title: VIDEO DISPLAY SYSTEM WITH TWO CONTROLLERS
EACH ABLE TO SCALE AND BLEND RGB AND YUV
SURFACES

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REPLY BRIEF

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Sir:

This is in response to the Examiner's Answer, dated January 28, 2004 in response to the Appeal Brief filed on August 13, 2003. Please consider the remarks below.

1. STATUS OF CLAIMS

The Appellant has no comments to add to this section.

2. STATUS OF AMENDMENTS

The Appellant has no comments to add to this section.

3. SUMMARY OF THE INVENTION

The Examiner asserts that the Appellant incorrectly alleges the controller combines (blend and/or overlay) the at least two first surfaces while the specification did not describe blending and overlaying two first surfaces. The Examiner is correct in recognizing that the summary of the invention in Appellant's brief describes that both the first display controller and the second display controller independently blend and overlay. However, the Examiner is incorrect in his assertion that this breadth was not fully supported by the specification as originally filed.

The claims, as originally filed, described the step of having a first display controller that can "combine (blend and/or overlay) the at least two first surfaces" and a second display controller that can "combine (blend and/or overlay) the at least two second surfaces". This was also stated in the summary of the invention of the application as originally filed at page 2, line 19 and page 3, line 6. In addition, the specification as originally filed comprised the following statement at page 7, lines 11-14:

"Each CRTC contains one or more backend Scaler (14) (refer to Figure 2) that allows the input surfaces to be re-scaled before being combined (overlaid, blended etc.) with the other surface. Alternatively, prescaling of any surface could be done by the drawing engine."

And the following statement at page 7, lines 20-21:

"Each CRTC also contains a combining unit (or sub picture blending unit) for combining (overlying or blending) the two surface (sic)."

While the statement "combine (blend and/or overlay)" was amended from claim 1, this was done as a result of a 112(2) rejection from the examiner, who claimed that the expression was not clear. It was replaced by "at least one of blend and overlay", which was not intended to change the scope of the claim, but merely to remove the inappropriate claim language of "and/or" which can be considered ambiguous and indefinite. What was intended to be the invention has not changed throughout the prosecution of the present application and the original claims were fully supported by the accompanying disclosure. The Appellant would like to point out that this particular amendment came as a result of an interview with the Examiner on September 12, 2002, where it was agreed by both parties that the statement "at least one of blend and overlay" was a suitable and clear replacement for "combine (blend and/or overlay)" in order to clarify the claim language that did not change the scope of claim 1. The expression in Claim 1 was not rejected under 35USC112(1) prior to the amendment in the first office action and at the time that this clarifying amendment was agreed to.

The Examiner has asserted in his Answer that this amendment "altered the function of the first display controller" (page 8, line 13 of the Answer), and the same is said for the second controller. This is not correct. The original plain English expression of "blend and/or overlay" includes the embodiments of blending alone, overlaying alone and performing both blending and overlaying. It is widely recognized in patent claim language that the plain English expression "A and/or B" is preferably expressed unambiguously in patent claim language as "at least one of A and B", while in the case that the combination of A and B is not to be included, the plain English expression is "A or B" (in Boolean logic, one would use the exclusive-OR operator) which is preferably expressed in patent claim language as "one of A and B". In this instance, "combine (blend and/or overlay)" as expressed in the originally presented claims and specification is

correctly and identically expressed in patent claim language as "at least one of blend and overlay". No alteration of embodiments covered by the claim language can possibly result from the amendment.

4. ISSUES

The Appellant has no comments to add to this section.

5. GROUPING OF CLAIMS

The Appellant has no comments to add to this section.

6. ARGUMENT

First Issue

The Examiner states that the discussion presented does not support one aspect of the claimed invention because claim 1 claims to blend and overlay two first surfaces and to blend and overlay two second surfaces. The Examiner is correct in recognizing that the breadth of claim 1 requires two independent display controllers that can both blend and overlay. The Examiner is also correct in asserting that the arguments presented in this section of Appellant's brief did not clearly provide evidence that the specification supported having two independent display controllers with the ability to blend and overlay.

The Appellant would like to add that the specification as originally filed fully supports this aspect of the claim. Page 5, lines 1-4 states:

"The primary display controller can read two surfaces from display memory into two pixel paths. Each surface can be in any one of a variety of pixel data formats such as YUV (4:2:0, 4:2:2 etc.) and RGB (8, 16, 24, 32). The primary display controller can combine (overlay or blend) the two surfaces together."

It is then stated at page 5, lines 19 to 22:

"The secondary display controller can also simultaneously read 2 surfaces from display memory into two pixel paths and combine them together. The secondary display controller can be identical to the primary display controller, or it can support a subset of the full feature set."

From these passages, it can be understood that the first display controller can blend and overlay two first surfaces, and the second display controller can blend and overlay two second surfaces. It should also be understood that the first surfaces and the second surfaces may or may not be the same surfaces, and that each controller is capable of outputting the results of having blended and overlaid the two respective surfaces independently from one another. Therefore, the specification fully supports the first display controller blending and overlaying two first surfaces and the second display controller blending and overlaying of two second surfaces. It is clear to a person of ordinary skill in the art that both controllers have the capabilities of blending and/or overlaying and therefore, a person skilled in the art is enabled to do the steps as described in claim 1.

The Examiner states that since the drawing engine 60 is independent of CRTC1 or CRTC2, there is no support for the claimed first display controller to blend two surfaces and then to overlay the blended surface with a third surface and for the claimed second display controller to blend two surfaces and to overlay the blended surface with a third surface. This is incorrect for the reasons outlined below.

As argued in the Appeal Brief, it is maintained that each display controller apparatus has the capability to call upon the drawing engine 60 to perform a blending operation on two surfaces. The drawing engine 60 is to be considered as a resource available for the entire graphic controller system, and should not be associated with just one of the two display controllers. This is emphasized in the specification incorporated by reference at page 8, lines 21 to 22, where it states that "the YUV surface is processed by the drawing engine 60 in order to blend using the 3D drawing engine capability within the display controller apparatus..."(emphasis added). Thus, the drawing engine 60 is not

independent of CRTC1 or CRTC2. It is an external resource that can be used by either one and therefore, its capabilities are associated to both display controllers.

Section 112(1) of the MPEP clearly sets out that the standard for support is that the specification contains a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains to make and use the same. The Appellant submits that this standard has been met by the specification as originally filed. The Examiner has failed to show insufficiency by giving evidence as to why the person skilled in the art reading the specification would not be enabled to have each controller blend and then overlay. The specification teaches how each controller independently reads two surfaces from memory, as evidenced by the statements quoted above from page 5 of the disclosure. The specification also teaches how each controller contains a blending unit, capable of blending or overlaying the two surfaces, as evidenced by the statements quoted above from page 7 of the disclosure. And finally, the specification teaches how each controller can call upon the drawing engine to perform a blending operation on two surfaces, as evidenced by the statements quoted above from page 8 of the incorporated by reference specification. In addition, the specification clearly states that both display controllers can have the exact same functions and capabilities, as evidenced at page 5, lines 19 to 22. Therefore, it can be understood that claim 1 is fully enabled by the specification and the 112(1) rejection should be withdrawn.

Second Issue

The Examiner asserts that it is not inherent to the present application that the desktop shown in figure 4 is an RGB desktop and that the Applicant is attempting to add to the specification disclosure that is more general than what was originally presented. It is incorrect for the Examiner to assert that an RGB desktop is not inherent to the present application. As per section

2164.05(b) of the MPEP, the relative skill of those in the art refers to the skill of those in the art in relation to the subject matter to which the claimed invention pertains at the time the application was filed (in re Naquin, 398 F.2d 863, 866, 158 USPQ 317, 319 (CCPA 1968)). At the time of filing the application, namely March 2000, a person skilled in the art would have known that a desktop was likely to be RGB. As per section 2163.07(a) of the MPEP, by disclosing in a patent application a device that inherently performs a function or has a property, operates according to a theory or has an advantage, a patent application necessarily discloses that function, theory or advantage, even though it says nothing explicit concerning it. The application may later be amended to recite the function, theory or advantage without introducing prohibited new matter (In re Reynolds, 443 F.2d 384, 170 USPQ 94 (CCPA 1971); In re Smythe, 480 F. 2d 1376, 178 USPQ 279 (CCPA 1973)). The Appellant adamantly submits that given that this application was filed in the year 2000, an RGB desktop is inherent to the main applications of the present invention, as this would have been understood by a person skilled in the art.

The background of the invention sets the context by stating:

"This is useful, for example, in the situation that a movie source in YUV format is obtained by decoding a video file from say a CD-ROM or DVD device, and written to a video surface in graphics memory. At the same time a computer environment desktop is stored in RGB format in another surface within graphics memory. These two surfaces can be combined to provide the YUV source within a window on the desktop." (emphasis added)

While it is understood that the background of the invention does not constitute subject-matter that can be used to support a claim, it is submitted that a person skilled in the art would necessarily infer that the desktop, as described in the specification, is an RGB desktop. Furthermore, Figure 4 points to the logo C

within a window and states "Windowed output with Sub Picture Blending (YUV over RGB overlay)". From this statement, it can be understood that it is the logo C that is the YUV and the window is the RGB. Therefore, the "Other Windows or desktop, etc" could also reasonably be understood as being RGB windows.

The Examiner states that the specification teaches that applicants Windows desktop surface is RGB alpha format or RGB32, while the sentence proposed to be added is broader than that which was described by the specification. Given that the teaching of a Windows desktop is in the detailed description of the preferred embodiment ("One of the main applications of the invention is where the second display can show a video image full screen while the main display maintains a separate image such as a fully interactive Windows desktop." (page 6, lines 11-13)), it is not unreasonable for someone to understand that the desktop is RGB while not necessarily being a Windows desktop. It is understood, from reading the specification as a whole, that the Windows desktop is only one embodiment of the invention as described, and that other variants do exist. Therefore, the sentence proposed to be added by the Applicant is not broader than that which was described in the specification since it was implicit in the specification as originally filed and is simply being made explicit by the proposed sentence.

Third Issue

It is not disputed by the Examiner that the system taught by Ranganathan cannot display a YUV format video surface in a window overlaid on a desktop on one output device, while displaying YUV format video in a window overlaid on a desktop on another output device. This is in fact stated by Ranganathan at column 7, lines 63-65 of the disclosure. However, the Appellant believes the Examiner is adding too much to the reference. It is evident that with only the reference and no additional art, it would be impossible for someone to come to the claimed invention. The figure submitted as exhibit G in the Appeal

Brief corresponds to the "additional logic" suggested by Ranganathan in accordance with the resources available in the system that is described. It would not be reasonable to believe a person, without having seen the present application, would be led to providing a second display controller with the same capabilities as the first display controller capable of performing the steps recited in claim 1 of the present application.

The Examiner states that column 7, lines 66 to 67 of Ranganathan teaches displaying two completely different images on the two displays. The Appellant agrees, however this is only in the case of two different full screen displays, not one full screen and one full screen having a smaller window overlaid therein. The Examiner argues that another RGB path similar to RGB path 36 is required to display a completely different graphics image on the CRT. The Appellant submits that no other RGB path is required in addition to the two paths already shown in figure 8 of Ranganathan. The statement that "twice the graphics area may be displayed" does not suggest or teach any additional path. This is evidenced in column 11, lines 26 to 31, where Ranganathan states:

"Graphics data rather than the movie data could be shown on high-resolution CRT 24' by sending RGB graphics pixels through YUV path 34 rather than YUV movie pixels. The pixel muxes could also reverse their inputs so that the full-screen movie overlay is shown on LCD panel 22 while the graphics data is shown on high-resolution CRT 24'."

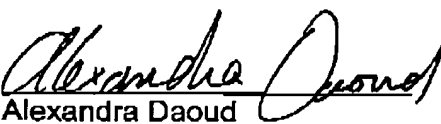
It is clear that RGB path 36 and YUV path 34 are simply named that way for the sake of simplicity but could easily accommodate pixels of either format. This is also evidenced by Table 1 provided by Ranganathan in column 11, where it is shown all the possible combinations on the two types of displays. Thus, no other RGB path is required to show two completely different graphics images on two CRT displays, as required in order to show twice the graphics. Therefore, the

arguments provided by the Examiner asserting that the claimed first and second display controllers are taught and suggested to a person skilled in the art are moot since no additional path is suggested by Ranganathan.

The Examiner asserts that the claimed invention only requires blending or overlaying not both blending and overlaying, thus, a prior art reference only needs to teach one of these two graphics functions. The Appellants agree with the Examiner's statement. However, Ranganathan does not teach having two display controllers each capable of performing one of the two functions, namely blending and overlaying, on two sets of surfaces, that is on at least two first surfaces and at least two second surfaces. The system described by Ranganathan does not have the ability to have a first display controller read from a graphics memory at least two first surfaces and combine (blend and/or overlay) the at least two surfaces, and a second display controller read from a graphics memory at least two second surfaces and combine (blend and/or overlay) the at least two second surfaces. This is not taught or suggested by Ranganathan and therefore, the 103 (a) rejection should be withdrawn.

Accordingly, a decision in favor of the acceptability of the claims under appeal is respectfully solicited.

Respectfully submitted,


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